Always a Step Ahead

ARDEC ARMAMENTS

Rethinking User Interface Design and Evaluation

Presented to:

NDIA Armament System Forum

3 May 2017

UNPARALLELED

COMMITMENT & SOLUTIONS

Act like someone's life depends on what we do.
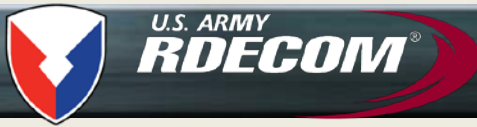
U.S. ARMY

U.S. ARMY RDECOM

U.S. ARMY ARMAMENT RESEARCH, DEVELOPMENT & ENGINEERING CENTER

- Classification: UNCLASSIFIED
- Type of Briefing: INFORMATIONAL
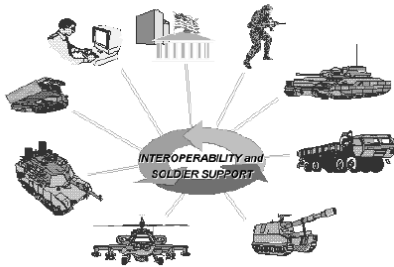- Distribution A: Approved for Public Release.

- When completely redesigning a Graphical User Interface, what is the best way to collect user preferences to make the best system possible?

1993

U. S. Army Weapon Systems
Human-Computer Interface Style Guide
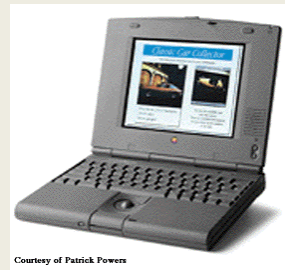
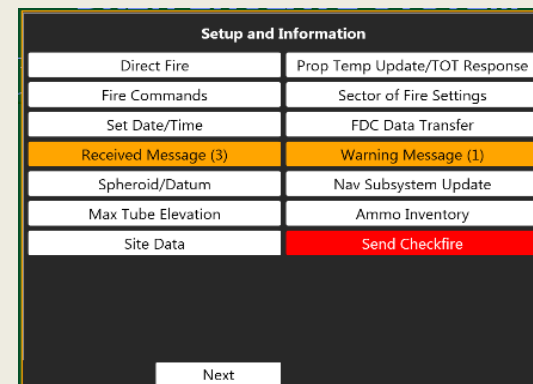INTEROPERABILITY and SOLDIER SUPPORT
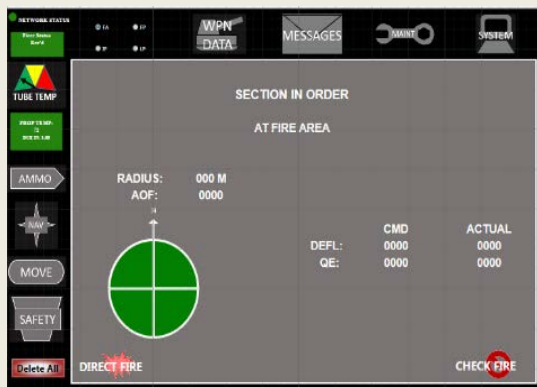
Version 3

December 1999

Courtesy of Patrick Powers

- 3 Prototypes

- Different look and feel

- Users choose the best from each

The User Jury

- A usability test where actual intended users perform tasks and give feedback

Army analysts examine the Commander's Toolkit shared workspace functionality during the User Jury with the 1st Infantry Division at Fort Riley, Kansas. They tested this function for assemblying multiple mobile tablets to expand collaboration space.
Mission Command Battle Lab's photos.

Multiple:
✓Prototype Options
✓Locations
✓User Experience Levels

- Surveys were open ended or asked to rate the interface or specific features

- Some useful feedback on features that were generally liked or disliked by the majority of the users.

- The tests failed to provide actual metrics on usability, entry time

Limitations:

- 1-2 Trials

- Subjective feedback

- Underused data

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How intuitive is the interface and who will be using it?
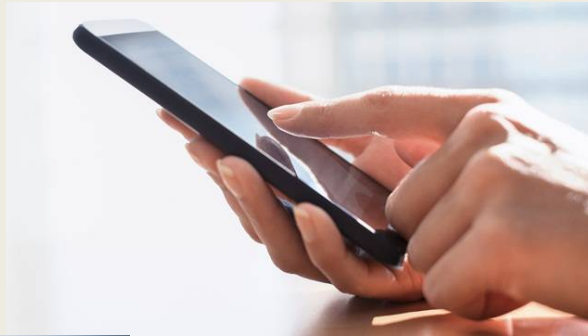
Test the interface for intuitiveness before bringing to the user jury

The Test:

• Brand new users

• Run through the same process up to ten times and collect times

• Analyze

Ammo

Shells:

Name	Country	Type	Lot	Weight	Quantity
M107DC	UK	HE	B	4	12
M795IM	US	HE	T	4	8

Propellant:

Name	Country	Type	Lot	Extended Lot	Quantity
M231	US	Green	J	TYA	15
M232	US	White	A	BBN	23

Fuzes:

Name	Country	Type	Quantity
M782	US	PD	18
M557	US	PD	9

Dashboard
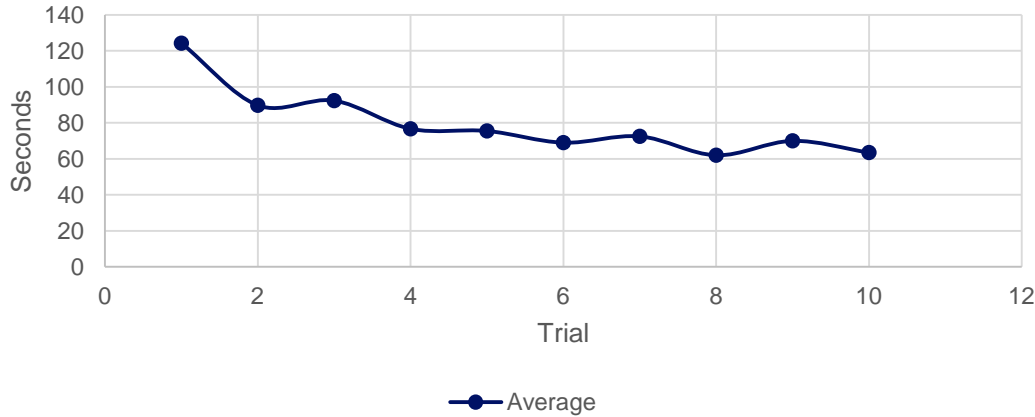
Percent Improvement
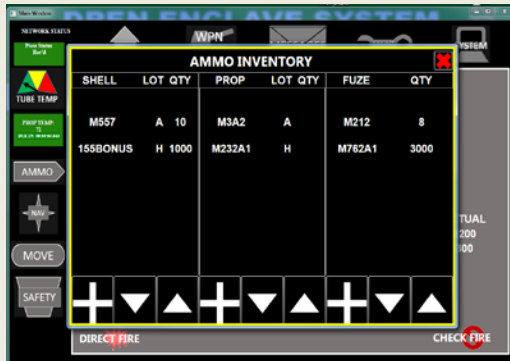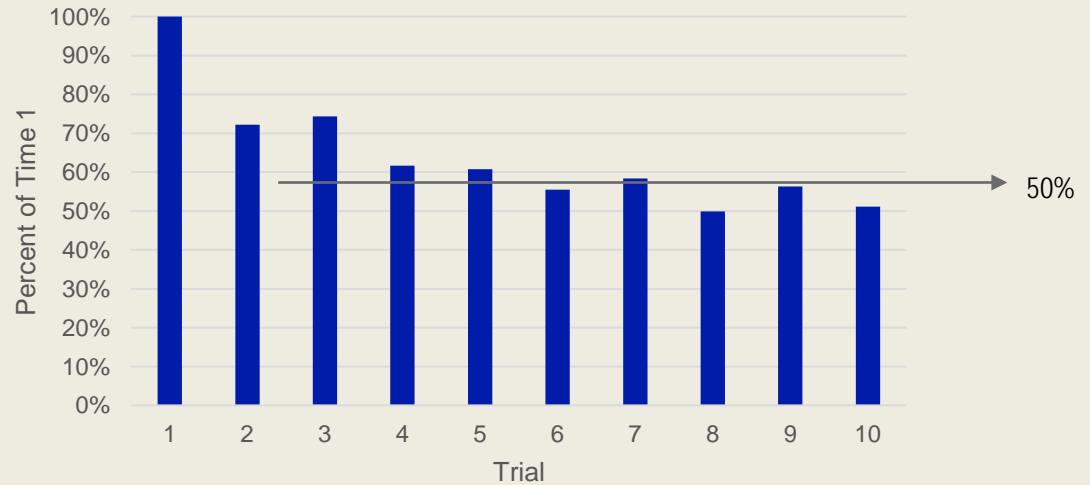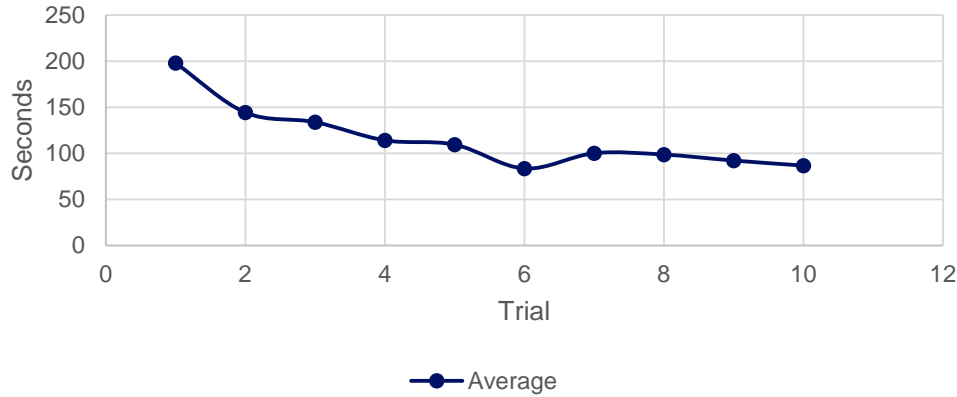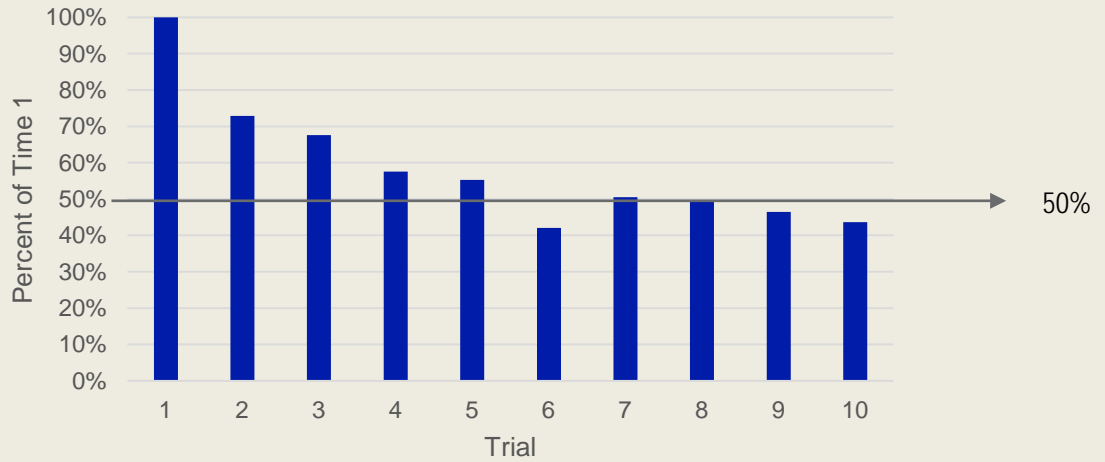
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Kiosk

Ammo Inventory Summary

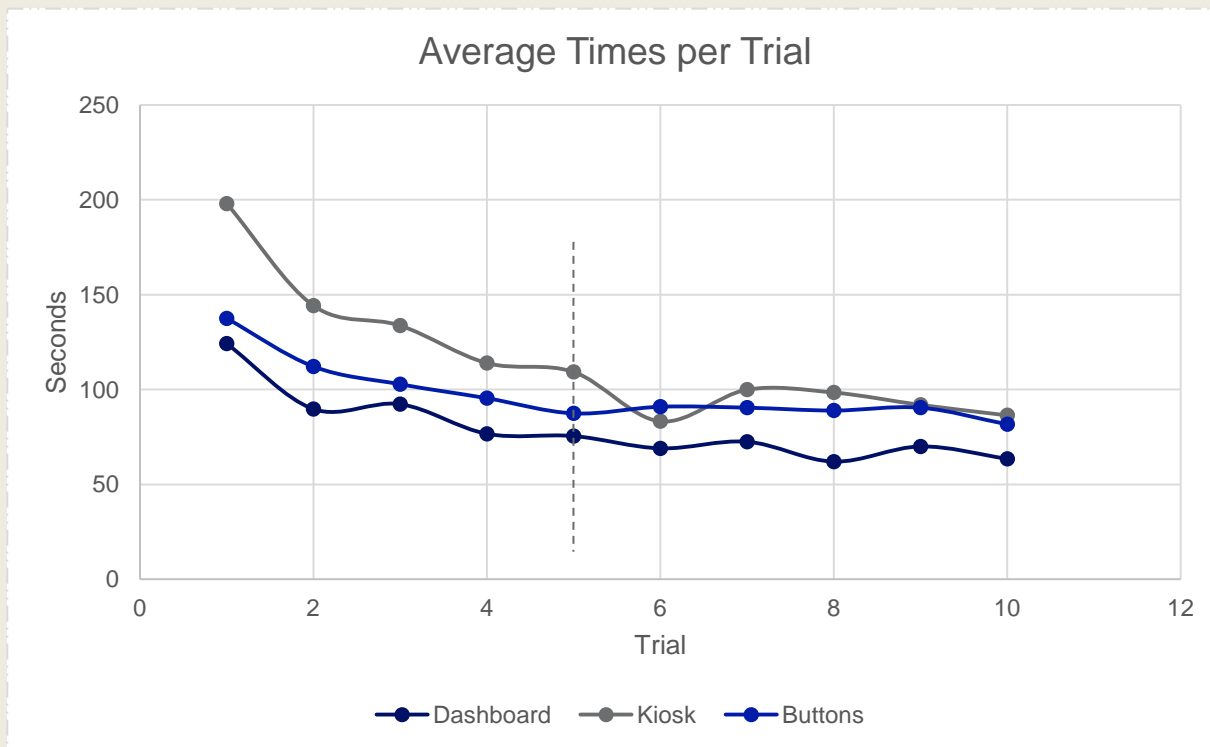Percent Improvement

Buttons

Percent Improvement

65%

Trial 5

13
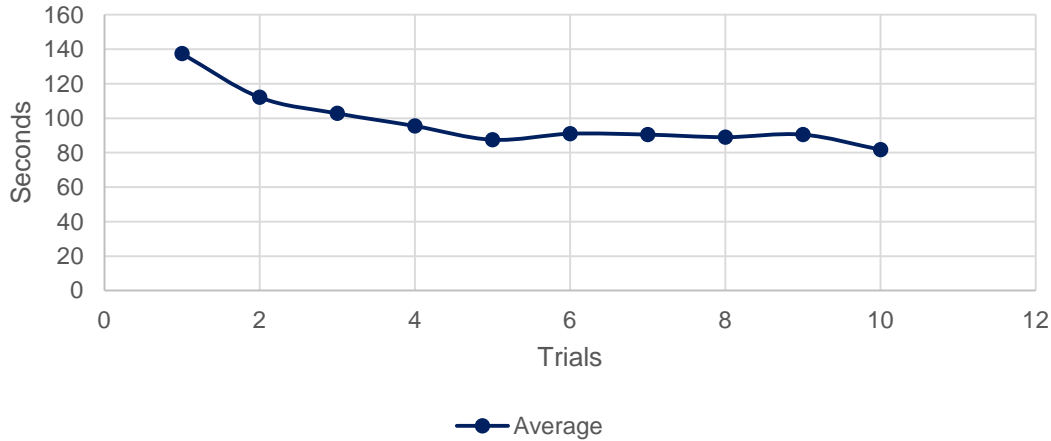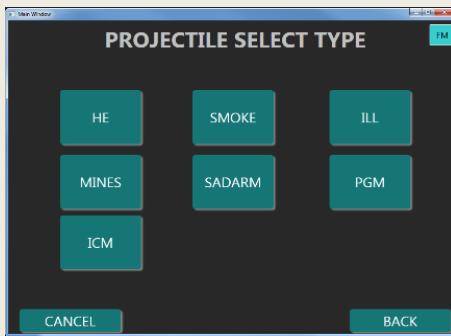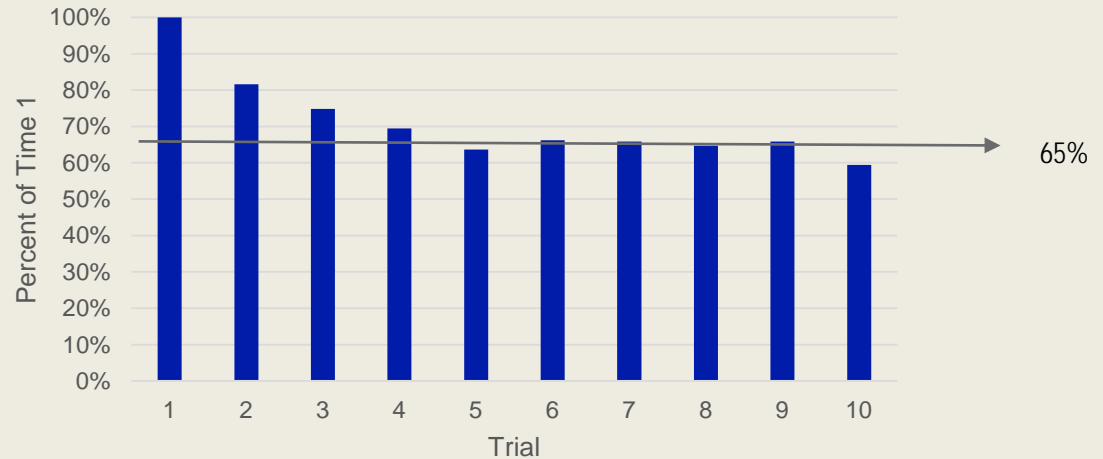
Before you leave

- Get uninvolved volunteers to run through the process

- Find your "burn time"

At the user jury

- Use that as your minimum trial amount at your user jury

- Gather the best feedback from your users

- Normal user jury testing (one or two runs through the system) may not select the best design when the target user should be a well-trained expert

- A better design may not be apparent until the user conducts repeated trial runs through a process and gets a feel for how the system will actually be used

- Find your "burn time" of each prototype and use that in your user jury

- Your test may take longer, but it will pay off in accuracy

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QUESTIONS

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